#11

SEQUENCE LISTING

<110> EVANS, RONALD M.

<120> NOVEL STEROID-ACTIVATED NUCLEAR RECEPTORS AND USES THEREFOR

<130> SALK2270-5

<140> 10/081,555
<141> 2002-02-20

<150> 09/458,366
<151> 1999-12-09

<150> 09/227,718
<151> 1999-01-08

<150> 09/005,286
<151> 1998-01-09

<160> 48

<170> PatentIn Ver. 2.1

<210> 1
<211> 2068
<212> DNA
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<222> (583)..(1884)

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<222> (1263)
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cagactgatg aaatgcgctc agaattactt agacaaagcg gatatttgcc actctcttcc 120

ccttttcctg tgtttttgta gtgaagagac ctgaaagaaa aaagtaggga gaacataatg 180

agaacaaata cggtaatctc ttcatttgct agttcaagtg ctggacttgg gacttaggag 240

gggcaatgga gccgcttagt gcctacatct gacttggact gaaatatagg tgagagacaa 300

gattgtctca tatccgggga aatcataacc tatgactagg acgggaagag gaagcactgc 360

ctttacttca gtgggaatct cggcctcagc ctgcaagcca agtgttcaca gtgagaaaag 420

caagagaata agctaatact cctgtcctga acaaggcagc ggctccttgg taaagctact 480

ccttgatcga tcctttgcac cggattgttc aaagtggacc ccaggggaga agtcggagca 540

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aagaacttac caccaagcag tccaagaggc ccagaagcaa ac ctg gag gtg aga    594
                                                 Met Glu Val Arg
                                                   1

ccc aaa gaa agc tgg aac cat gct gac ttt gta cac tgt gag gac aca    642
Pro Lys Glu Ser Trp Asn His Ala Asp Phe Val His Cys Glu Asp Thr
  5                  10                  15                  20

gag tct gtt cct gga aag ccc agt gtc aac gca gat gag gaa gtc gga    690
Glu Ser Val Pro Gly Lys Pro Ser Val Asn Ala Asp Glu Glu Val Gly
                25                  30                  35

ggt ccc caa atc tgc cgt gta tgt ggg gac aag gcc act ggc tat cac    738
Gly Pro Gln Ile Cys Arg Val Cys Gly Asp Lys Ala Thr Gly Tyr His
            40                  45                  50

ttc aat gtc atg aca tgt gaa gga tgc aag ggc ttt ttc agg agg gcc    786
Phe Asn Val Met Thr Cys Glu Gly Cys Lys Gly Phe Phe Arg Arg Ala
        55                  60                  65

atg aaa cgc aac gcc cgg ctg agg tgc ccc ttc cgg aag ggc gcc tgc    834
Met Lys Arg Asn Ala Arg Leu Arg Cys Pro Phe Arg Lys Gly Ala Cys
    70                  75                  80

gag atc acc cgg aag acc cgg cga cag tgc cag gcc tgc cgc ctg cgc    882
Glu Ile Thr Arg Lys Thr Arg Arg Gln Cys Gln Ala Cys Arg Leu Arg
 85                  90                  95                 100

aag tgc ctg gag agc ggc atg aag aag gag atg atc atg tcc gac gag    930
Lys Cys Leu Glu Ser Gly Met Lys Lys Glu Met Ile Met Ser Asp Glu
                105                 110                 115

gcc gtg gag gag agg cgg gcc ttg atc aag cgg aag aaa agt gaa cgg    978
Ala Val Glu Glu Arg Arg Ala Leu Ile Lys Arg Lys Lys Ser Glu Arg
            120                 125                 130

aca ggg act cag cca ctg gga gtg cag ggg ctg aca gag gag cag cgg   1026
Thr Gly Thr Gln Pro Leu Gly Val Gln Gly Leu Thr Glu Glu Gln Arg
        135                 140                 145

atg atg atc agg gag ctg atg gac gct cag atg aaa acc ttt gac act   1074
Met Met Ile Arg Glu Leu Met Asp Ala Gln Met Lys Thr Phe Asp Thr
    150                 155                 160

acc ttc tcc cat ttc aag aat ttc cgg ctg cca ggg gtg ctt agc agt   1122
Thr Phe Ser His Phe Lys Asn Phe Arg Leu Pro Gly Val Leu Ser Ser
165                 170                 175                 180

ggc tgc gag ttg cca gag tct ctg cag gcc cca tcg agg gaa gaa gct   1170
Gly Cys Glu Leu Pro Glu Ser Leu Gln Ala Pro Ser Arg Glu Glu Ala
                185                 190                 195

gcc aag tgg agc cag gtc cgg aaa gat ctg tgc tct ttg aag gtc tct   1218
Ala Lys Trp Ser Gln Val Arg Lys Asp Leu Cys Ser Leu Lys Val Ser
            200                 205                 210
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ctg cag ctg cgg ggg gag gat ggc agt gtc tgg aac tac aaa ccc cca   1266
Leu Gln Leu Arg Gly Glu Asp Gly Ser Val Trp Asn Tyr Lys Pro Pro
        215                 220                 225

gcc gac agt ggc ggg aaa gag atc ttc tcc ctg ctg ccc cac atg gct   1314
Ala Asp Ser Gly Gly Lys Glu Ile Phe Ser Leu Leu Pro His Met Ala
    230                 235                 240

gac atg tca acc tac atg ttc aaa ggc atc atc agc ttt gcc aaa gtc   1362
Asp Met Ser Thr Tyr Met Phe Lys Gly Ile Ile Ser Phe Ala Lys Val
245                 250                 255                 260

atc tcc tac ttc agg gac ttg ccc atc gag gac cag atc tcc ctg ctg   1410
Ile Ser Tyr Phe Arg Asp Leu Pro Ile Glu Asp Gln Ile Ser Leu Leu
                265                 270                 275

aag ggg gcc gct ttc gag ctg tgt caa ctg aga ttc aac aca gtg ttc   1458
Lys Gly Ala Ala Phe Glu Leu Cys Gln Leu Arg Phe Asn Thr Val Phe
            280                 285                 290

aac gcg gag act gga acc tgg gag tgt ggc cgg ctg tcc tac tgc ttg   1506
Asn Ala Glu Thr Gly Thr Trp Glu Cys Gly Arg Leu Ser Tyr Cys Leu
        295                 300                 305

gaa gac act gca ggt ggc ttc cag caa ctt cta ctg gag ccc atg ctg   1554
Glu Asp Thr Ala Gly Gly Phe Gln Gln Leu Leu Leu Glu Pro Met Leu
    310                 315                 320

aaa ttc cac tac atg ctg aag aag ctg cag ctg cat gag gag gag tat   1602
Lys Phe His Tyr Met Leu Lys Lys Leu Gln Leu His Glu Glu Glu Tyr
325                 330                 335                 340

gtg ctg atg cag gcc atc tcc ctc ttc tcc cca gac cgc cca ggt gtg   1650
Val Leu Met Gln Ala Ile Ser Leu Phe Ser Pro Asp Arg Pro Gly Val
                345                 350                 355

ctg cag cac cgc gtg gtg gac cag ctg cag gag caa ttc gcc att act   1698
Leu Gln His Arg Val Val Asp Gln Leu Gln Glu Gln Phe Ala Ile Thr
            360                 365                 370

ctg aag tcc tac att gaa tgc aat cgg ccc cag cct gct cat agg ttc   1746
Leu Lys Ser Tyr Ile Glu Cys Asn Arg Pro Gln Pro Ala His Arg Phe
        375                 380                 385

ttg ttc ctg aag atc atg gct atg ctc acc gag ctc cgc agc atc aat   1794
Leu Phe Leu Lys Ile Met Ala Met Leu Thr Glu Leu Arg Ser Ile Asn
    390                 395                 400

gct cag cac acc cag cgg ctg ctg cgc atc cag gac ata cac ccc ttt   1842
Ala Gln His Thr Gln Arg Leu Leu Arg Ile Gln Asp Ile His Pro Phe
405                 410                 415                 420

gct acg ccc ctc atg cag gag ttg ttc ggt atc aca ggt agc tga       1887
Ala Thr Pro Leu Met Gln Glu Leu Phe Gly Ile Thr Gly Ser
                425                 430

gtggctgtcc ttgggtgaca cctccgagag gtagttagac ccagagccct ctgagtcgcc 1947
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actcccgggc caagacagat ggacactgcc aagagccgac aatgccctgc tggcctgtct 2007

ccctagggaa-ttcctgctat gacagctggc tagcattcct caggaaggac atggggtgcc 2067

c 2068

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<211> 434
<212> PRT
<213> Homo sapiens

<220>
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<222> (227)
<223> Threonine

<400> 2

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  1               5                  10                  15

Cys Glu Asp Thr Glu Ser Val Pro Gly Lys Pro Ser Val Asn Ala Asp
             20                  25                  30

Glu Glu Val Gly Gly Pro Gln Ile Cys Arg Val Cys Gly Asp Lys Ala
         35                  40                  45

Thr Gly Tyr His Phe Asn Val Met Thr Cys Glu Gly Cys Lys Gly Phe
     50                  55                  60

Phe Arg Arg Ala Met Lys Arg Asn Ala Arg Leu Arg Cys Pro Phe Arg
 65                  70                  75                  80

Lys Gly Ala Cys Glu Ile Thr Arg Lys Thr Arg Arg Gln Cys Gln Ala
                 85                  90                  95

Cys Arg Leu Arg Lys Cys Leu Glu Ser Gly Met Lys Lys Glu Met Ile
            100                 105                 110

Met Ser Asp Glu Ala Val Glu Glu Arg Arg Ala Leu Ile Lys Arg Lys
        115                 120                 125

Lys Ser Glu Arg Thr Gly Thr Gln Pro Leu Gly Val Gln Gly Leu Thr
    130                 135                 140

Glu Glu Gln Arg Met Met Ile Arg Glu Leu Met Asp Ala Gln Met Lys
145                 150                 155                 160

Thr Phe Asp Thr Thr Phe Ser His Phe Lys Asn Phe Arg Leu Pro Gly
                165                 170                 175

Val Leu Ser Ser Gly Cys Glu Leu Pro Glu Ser Leu Gln Ala Pro Ser
            180                 185                 190

Arg Glu Glu Ala Ala Lys Trp Ser Gln Val Arg Lys Asp Leu Cys Ser
        195                 200                 205
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Leu Lys Val Ser Leu Gln Leu Arg Gly Glu Asp Gly Ser Val Trp Asn
    210                 215                 220

Tyr Lys Pro Pro Ala Asp Ser Gly Gly Lys Glu Ile Phe Ser Leu Leu
225                 230                 235                 240

Pro His Met Ala Asp Met Ser Thr Tyr Met Phe Lys Gly Ile Ile Ser
                245                 250                 255

Phe Ala Lys Val Ile Ser Tyr Phe Arg Asp Leu Pro Ile Glu Asp Gln
            260                 265                 270

Ile Ser Leu Leu Lys Gly Ala Ala Phe Glu Leu Cys Gln Leu Arg Phe
        275                 280                 285

Asn Thr Val Phe Asn Ala Glu Thr Gly Thr Trp Glu Cys Gly Arg Leu
    290                 295                 300

Ser Tyr Cys Leu Glu Asp Thr Ala Gly Gly Phe Gln Gln Leu Leu Leu
305                 310                 315                 320

Glu Pro Met Leu Lys Phe His Tyr Met Leu Lys Lys Leu Gln Leu His
                325                 330                 335

Glu Glu Glu Tyr Val Leu Met Gln Ala Ile Ser Leu Phe Ser Pro Asp
            340                 345                 350

Arg Pro Gly Val Leu Gln His Arg Val Val Asp Gln Leu Gln Glu Gln
        355                 360                 365

Phe Ala Ile Thr Leu Lys Ser Tyr Ile Glu Cys Asn Arg Pro Gln Pro
    370                 375                 380

Ala His Arg Phe Leu Phe Leu Lys Ile Met Ala Met Leu Thr Glu Leu
385                 390                 395                 400

Arg Ser Ile Asn Ala Gln His Thr Gln Arg Leu Leu Arg Ile Gln Asp
                405                 410                 415

Ile His Pro Phe Ala Thr Pro Leu Met Gln Glu Leu Phe Gly Ile Thr
            420                 425                 430

Gly Ser
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<210> 3
<211> 25
<212> DNA
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<220>
<223> Description of Artificial Sequence: Putative SXR response element from the steroid hydoxylase, rCYP3A1

<400> 3
tagacagttc atgaagttca tctac 25

<210> 4
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Putative SXR response element from the steroid hydoxylase, rCYP3A2

<400> 4
taagcagttc ataaagttca tctac 25

<210> 5
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Putative SXR response element from the steroid hydoxylase, rUGT1A6

<400> 5
actgtagttc ataaagttca catgg 25

<210> 6
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Putative SXR response element from the steroid hydoxylase, rbCYP2C1

<400> 6
caatcagttc aacagggttc accaat 26

<210> 7
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Putative SXR response element from the steroid hydoxylase, rP450R

<400> 7
cacaggtgag ctgaggccag cagcaggtcg aaa 33

<210> 8
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Putative SXR response element from the steroid hydoxylase, rCYP2A1

<400> 8
gtgcaggttc aactggaggt caacatg 27

<210> 9
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Putative SXR response element from the steroid hydoxylase, rCYP2A2

<400> 9
gtgctggttc aactggaggt cagtatg 27

<210> 10
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Putative SXR response element from the steroid hydoxylase, rCYP2C6

<400> 10
agtctagttc agtgggggtt cagtctt 27

<210> 11
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Putative SXR response element from the steroid hydoxylase, hCYP2E1

<400> 11
gagatggttc aaggaagggt cattaac 27

<210> 12
<211> 26

<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat
with spacer of 0 nucleotides

<400> 12
catagtcagg tcaaggtcag atcaac 26

<210> 13
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat
with spacer of 1 nucleotides

<400> 13
catagtcagg tcataggtca gatcaac 27

<210> 14
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat
with spacer of 2 nucleotides

<400> 14
catagtcagg tcaataggtc agatcaac 28

<210> 15
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat
with spacer of 3 nucleotides

<400> 15
catagtcagg tcatataggt cagatcaac 29

<210> 16
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat
with spacer of 4 nucleotides

<400> 16
catagtcagg tcatataagg tcagatcaac 30

<210> 17
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat
with spacer of 5 nucleotides

<400> 17
catagtcagg tcatatatag gtcagatcaa c 31

<210> 18
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat
with spacer of 6 nucleotides

<400> 18
catagtcagg tcatatataa ggtcaagatc aac 33

<210> 19
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat
with spacer of 7 nucleotides

<400> 19
catagtcagg tcatatatat aggtcagatc aac 33

<210> 20
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat
with spacer of 10 nucleotides

<400> 20
catagtcagg tcatatatat ataaggtcag atcaac 36

<210> 21
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat with spacer of 15 nucleotides

<400> 21
catagtcagg tcatagtagt agtagtagag gtcagatcaa c 41

<210> 22
<211> 17
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Example of a response element suitable for practice of the invention method

<220>
<221> modified_base
<222> (7)..(11)
<223> This region may encompass 5, 4 or 3 nucleotides, independently selected from a, c, t or g

<400> 22
agttcannnn ntgaact 17

<210> 23
<211> 18
<212> DNA
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<220>
<223> Description of Artificial Sequence: Example of a response element suitable for practice of the invention method

<220>
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<222> (7)..(12)
<223> a, c, t or g

<400> 23
tgaactnnnn nnaggtca 18

<210> 24
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 24
tgaactcaaa ggaggtca 18

<210> 25
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Inverted repeat response element with spacer of 0 nucleotides

<400> 25
agcttaggtc atgaccta 18

<210> 26
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Inverted repeat response element with spacer of 1 nucleotides

<400> 26
agcttaggtc agtgaccta 19

<210> 27
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Inverted repeat response element with spacer of 2 nucleotides

<400> 27
agcttaggtc acgtgaccta 20

<210> 28
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Inverted repeat response element with spacer of 3 nucleotides

<400> 28
agcttaggtc acagtgacct a 21

<210> 29
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Inverted repeat response element with spacer of 4 nucleotides

<400> 29
agcttaggtc acatgtgacc ta 22

<210> 30
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Inverted repeat response element with spacer of 5 nucleotides

<400> 30
agcttaggtc acactgtgac cta 23

<210> 31
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Inverted repeat response element with spacer of 6 nucleotides

<400> 31
agctttgaac tcaaaggagg tca 23

<210> 32
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: IR-M

<400> 32
agcttacgtc atgacgta 18

<210> 33
<211> 33
<212> DNA
<213> Homo sapiens

<400> 33
tagaatatga actcaaagga ggtcagtgag tgg 33

<210> 34
<211> 33
<212> DNA
<213> Homo sapiens

<400> 34
tagaatatga actcaaagga ggtaagcaaa ggg 33

<210> 35
<211> 32
<212> DNA
<213> Homo sapiens

<400> 35
tagaatatta actcaatgga ggcagtgagt gg 32

<210> 36
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide for PCR

<400> 36
gagcaattcg ccattactct gaagt 25

<210> 37
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide for PCR

<400> 37
gtccttgggg tcttctacct ttctc 25

<210> 38
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide for PCR

<400> 38
gacgatttgg atctggacat gttgg 25

<210> 39
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide for PCR

<400> 39
tgaacttcat gaact 15

<210> 40
<211> 25
<212> DNA
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<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 40
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<210> 41
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<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Illustrative peptide

<400> 41
Arg Gly Lys Thr Cys Ala
1 5

<210> 42
<211> 15
<212> DNA
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<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 42
tgttcttcat gttct 15

<210> 43
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 43
acaacttcat gaact 15

<210> 44
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
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with spacer of 3 nucleotides

<220>
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<222> (7)..(9)
<223> a, t, c or g

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aggtcannna ggtca 15

<210> 45
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<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat
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<220>
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<223> a, t, c or g

<400> 45
aggtcannnn aggtca 16

<210> 46
<211> 17
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<220>
<223> Description of Artificial Sequence: Direct repeat
with spacer of 5 nucleotides

<220>
<221> modified_base
<222> (7)..(11)
<223> a, t, c or g

<400> 46
aggtcannnn naggtca 17

<210> 47
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Direct repeat
with spacer of 3 nucleotides

<220>
<221> modified_base
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<223> a, t, c or g

<400> 47
agttcannnt gaact 15

<210> 48
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<220>
<223> Description of Artificial Sequence: Direct repeat
with spacer of 4 nucleotides

<220>
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<222> (7)..(10)
<223> a, t, c or g

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